

## Entry Line Fast Ethernet Switches

- **Easy handling (Plug & Play)**
- **Segment separation and speed adaptation**
- **Compact design for DIN-rail mounting**
- **Layer 2 switch according to IEEE802.3u**
- **Redundant power supply input**
- **Fiber versions available**
- **Monitoring via potential-free contacts**
- **Extended temperature range**



Since many years MICROSENS belongs to the established manufacturers of Industrial Ethernet components (switches and converters). Beside the already widely used Fiber Switches, MICROSENS now offers additional devices based on twisted pair cabling.

In smaller and already existing industrial communication networks with short distances the use of copper cables is still suitable. Especially in this environment the advantages of the Entry Line product family are significant.

The new switches support the data rate Ethernet as well as Fast Ethernet and are available with 5 or 8 twisted pair ports. Optional the switches are available with 1 or 2 fiber ports.

Due to the implemented autonegotiation feature the twisted pair ports are adjusting automatically to the correct speed of the connected end device. Additionally the copper ports are offering the auto crossing feature.

The chassis is designed for mounting on 35 mm DIN-rails.

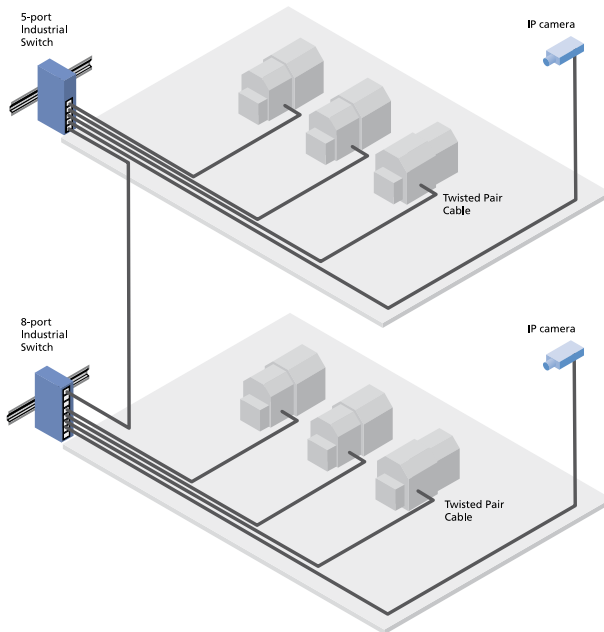
The devices are ready for instant use, a configuration by management is not necessary. With a pluggable connector the power supply is done by external power supplies with a voltage of 12 - 48 V DC. Therefore the device can also be used in telecommunication or power distribution centres (redundant supply possibly) and allows the monitoring of the devices by relay contact.

All new Entry Line devices distinguish themselves with easy handling (Plug&Play) and do not need extensive configuration. New developments are focussing on increasing the port numbers.

For applications requiring higher network complexity the enhanced line of MICROSENS Industrial Switches are offering an extended reliability with redundant ring structures and extensive management features.

# Entry Line Fast Ethernet Switches

## Application



## Ordering Information 5 and 8 Ports FE Switches

Art.-No.	Description	Connectors
MS655100	Industrial Fast Ethernet Switch, Entry Line, 5x 10/100Base-TX	5x RJ-45 2x Power, 1x Alarm
MS655140	Industrial Fast Ethernet Switch, Entry Line, 8x10/100Base-TX	8x RJ-45 2x Power, 1x Alarm

## Ordering Information FE Switches with Fiber Uplink

Art.-No.	Description	Connectors
<b>1x Fiber Uplink</b>		
MS655102	Industrial Fast Ethernet Switch, Entry Line, 4x 10/100Base-TX, 1x100Base-FX Multimode SC	4x RJ-45 1x SC duplex 2x Power, 1x Alarm
MS655104	Industrial Fast Ethernet Switch, Entry Line, 4x 10/100Base-TX, 1x100Base-FX Single Mode SC	4x RJ-45 1x SC duplex 2x Power, 1x Alarm
<b>2x Fiber Uplink</b>		
MS655122	Industrial Fast Ethernet Switch, Entry Line, 4x 10/100Base-TX, 2x100Base-FX Multimode SC	4x RJ-45 2x SC duplex 2x Power, 1x Alarm
MS655124	Industrial Fast Ethernet Switch, Entry Line, 4x 10/100Base-TX, 2x100Base-FX Single Mode SC	4x RJ-45 2x SC duplex 2x Power, 1x Alarm

## Accessories

Art.-No.	Description	Connectors
MS700420	DIN-rail power supply 24 Watt 24 V / 1.0 A, wide range input 85-264 VAC	In: 3-pin Out: 2-pin
MS700421	DIN-rail power supply 60 Watt 24 V / 2.5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700422	DIN-rail power supply 120 Watt 24 V / 5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin

Further products on request.

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## Technical Specifications

### Type

Fast Ethernet Industrial Switch  
5/8 x 10/100Base-TX or  
4x 10/100Base-TX + 1/2 x 100Base-FX

### Cable type

Shielded Twisted Pair cable,  
100 Ohm, Category 5,  
Pinout RJ45-ports auto crossing

### Fiber type

Multimode 50 or 62.5/125 µm, Dis-  
tance: 2 km  
Single Mode 9/125 µm, duplex,  
Distance: 30 km (standard)

### Data rate

10 or 100 Mbps

### LED displays

Per port: Link/Activity (Green),  
Full duplex/Collision (yellow)

Per unit: Power1 (green),  
Power2 (green), Fault (red)

### Mounting

35 mm DIN-rail, according  
DIN EN 50 022 and wall mount

### Power supply

12 - 48 V DC connections with screw  
terminals, redundant ports

### Dimensions

30 x 95 x 140 mm (w x d x h)

### Operating temperature

-10°C to 60°C

### Storage temperature

-40°C to 85°C

### Rel. humidity

5% to 95% non condensing

### EMI

FCC Class A, CE EN61000-4-2, CE  
EN61000-4-3, CE EN-61000-4-4, CE  
EN61000-4-5, CE EN61000-4-6, CE  
EN61000-4-8, CE EN61000-4-11, CE  
EN61000-4-12, CE EN61000-6-2, CE  
EN61000-6-4

### Stability Testing

IEC60068-2-32 (Free fall),  
IEC60068-2-27 (Shock),  
IEC60068-2-6 (Vibration)

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# Entry Line

## 5/8 Port Gigabit Ethernet Switches with SFP slots

- Easy handling (Plug & Play)
- Segment splitting and speed adaptation
- Compact design for DIN-rail mounting
- Gigabit Ethernet according to IEEE802.3ab and fiber to IEEE802.3z
- Redundant power supply-input
- SFP slots of 8 port version support 100/1000 dual speed
- Monitoring via potential-free contacts
- Extended temperature range



Since many years MICROSENS belongs to the established manufacturers of Industrial Ethernet components (switches and converters). Beside the already widely used fiber switches, MICROSENS now offers additional devices with only twisted pair ports.

In smaller and already existing industrial communication networks with short distances the use of copper cables is still suitable. Especially in this environment the advantages of the Entry Line product family are significant

The new switches support the data rate Ethernet, Fast Ethernet and Gigabit Ethernet and are available with 4 or 8 twisted pair ports. At the 8 port version two TP ports are designed as dual media. This means instead of the

RJ-45 port it is possible to use fiber optic by plugging in the relevant SFP. The SFP ports of the 8 port switch can be operated with 100Base-X or 1000Base-X which gives the option for a smooth migration from Fast to Gigabit Ethernet technology.

Due to the implemented autonegotiation feature the twisted pair ports are adjusting automatically to the correct speed of the connected end device. Additionally the copper ports are offering the auto crossing feature. The chassis is designed for mounting on 35 mm DIN-rails.

The devices are ready for instant use, a configuration by management is not necessary. About a wrap connection the power supply is possible by external power

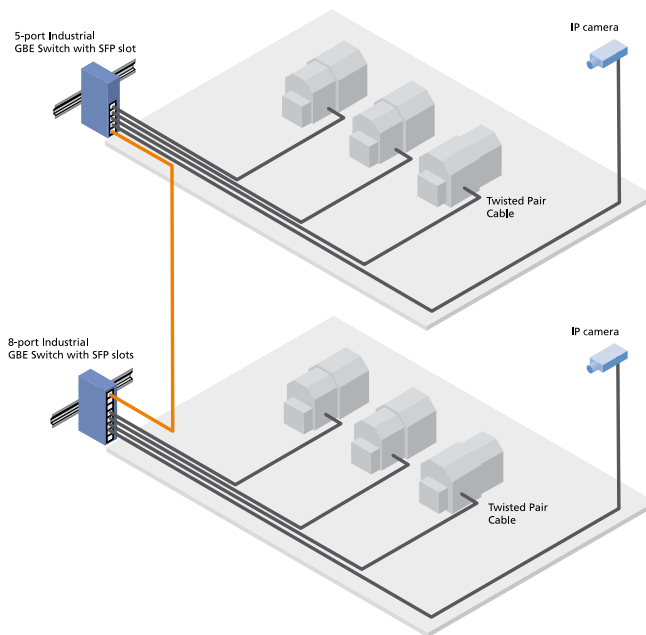
supplies with a voltage of 12 - 48 V DC. Therefore the device can also be used in telecommunication or power distribution centres (also redundant occurs possibly) and allow the surveillance of the devices by relay contact.

All new Entry Line devices distinguish themselves with easy handling (Plug&Play) and do not need extensive configuration. New developments are focussing on increasing the port numbers.

For applications requiring higher network complexity the enhanced line of MICROSENS Industrial Switches are offering an extended reliability with redundant ring structures.

# Entry Line Industrial 5/8 Port Gigabit Ethernet Switches with SFP slots

## Application



## Ordering Information

Art.-No.	Description	Connectors
MS655201	Industrial Fast Ethernet Switch, Entry Line, 4x 10/100Base-TX, 1x SFP slot	1x SFP slot 4x RJ-45 2x Power, 1x Alarm
MS655210	Industrial Gigabit Ethernet Switch, Entry Line, 6x 10/100/1000Base-T, 2x 10/100/1000Base-T optional 2x SFP slot	2x SFP slot 8x RJ-45 2x Power, 1x Alarm

## SFP Optical Transceivers

Art.-No.	Description	Connectors
MS100190	SFP Fast Ethernet Transceiver, 1310 nm Multimode, max. 125 Mbps	LC duplex
MS100191	SFP Fast Ethernet Transceiver, 1310 nm Single Mode, max. 125 Mbps	LC duplex
MS100200*	SFP, Gigabit Ethernet / Fibre Channel 850 nm Multimode Transceiver, max. 1.25 Gbps	LC duplex
MS100210*	SFP, Gigabit Ethernet / Fibre Channel 1310 nm Single Mode Transceiver, max. 1.25 Gbps, min. 10 km	LC duplex

\*) Option "D" for Diagnostic Function (e.g. MS100200D)

## Accessories

Art.-No.	Description	Connectors
MS700420	DIN-rail power supply 24 Watt 24 V / 1,0 A, wide range input 85-264 VAC	In: 3-pin Out: 2-pin
MS700421	DIN-rail power supply 60 Watt 24 V / 2,5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700422	DIN-rail power supply 120 Watt 24 V / 5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700434	DC/DC DIN-rail power supply 24 Watt 24 V/1.0 A, wide range input 18-75 V DC	In: 3-pin Out: 2-pin

Further products on request.

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## Technical Specifications

### Type

Industrial Gigabit Ethernet Switch  
4/8x 10/100/1000Base-T,  
1/2 x SFP slot (100 Mbps and 1 Gbps)  
at 8 port version

### Fiber type

Depending on the used SFP

### Cable type

Shielded Twisted Pair cable, 100 Ohm,  
Category 5,  
Pin out RJ45-ports auto crossing

### Data rate

10, 100 or 1000 Mbps

### LED displays

Per port: Link/Activity (Green), speed  
(1000 Green)

SFP: Link/Activity (Green)

PWR: Power active (Green), Power  
inactive (off)

Fault: Power 1 or Power 2 are inactive  
(Red)

### Mounting

35 mm DIN-Rail, according  
DIN EN 50 022 and wall mount

### Power supply

12 - 48 V DC, connections with screw  
terminals, redundant ports

### Dimensions

8 port: 72 x 105 x 152 mm (w x d x h)  
4 port: 30 x 95 x 140 (w x d x h)

### Operating temperature

-10°C to 60°C

### Storage temperature

-40°C to 85°C

### Rel. humidity

5% to 95% non condensing

### EMI

FCC Class A, CE EN61000-4-2, CE  
EN61000-4-3, CE EN-61000-4-4, CE  
EN61000-4-5, CE EN61000-4-6, CE  
EN61000-4-8, CE EN61000-4-11, CE  
EN61000-4-12

### Stability Testing

IEC60068-2-32 (Free fall), IEC60068-2-  
27 (Shock), IEC60068-2-6 (Vibration)

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# Entry Line Fast Ethernet and Gigabit Ethernet Bridging Converter

- **Easy Handling (Plug & Play)**
- **Segment splitting and speed adaptation**
- **Redundant power supply-input**
- **Fast/Gigabit Ethernet according to IEEE802.3u/ab/2 and fiber to IEEE802.3z**
- **No extensive configuration**
- **Compact design for DIN-rail mounting**
- **Monitoring via potential-free contacts**
- **Extended temperature range**



The new Fast and Gigabit Ethernet Bridging Converter of the Industrial Ethernet Entry Line offer transmission speeds of up to 1 Gbps in Industrial Ethernet applications. In the office area Gigabit Ethernet has already established as the standard protocol. In order to integrate industrial end devices direct, MICROSENS offers the new Gigabit Ethernet Bridging Converter.

Beside the media conversion from copper to fiber the devices are doing a speed adaptation of 10/100Base-TX for Fast Ethernet and 10/100/1000Base-T for Gigabit Ethernet. This enables the direct connection of end devices with different data rate to the existing central switch.

Additionally the copper ports are having the auto crossing feature. The chassis is designed for mounting the device on 35 mm DIN-rails.

The devices are ready for instant use, a configuration by management is not necessary. With a pluggable connector the power supply is done by external power supplies with a voltage of 12 - 48 V DC. Therefore the device can also be used in telecommunication or power distribution centres (redundant supply possibly) and allows the monitoring of the devices by relay contact.

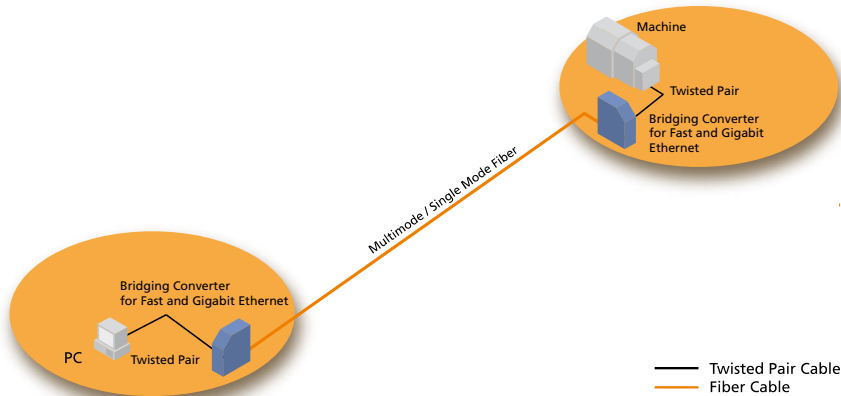
All new Entry Line devices distinguish themselves with easy handling (Plug&Play) and do not need extensive configuration. New develop-

ments are focussing on increasing the port numbers.

For applications requiring higher network complexity the enhanced line of MICROSENS Industrial Switches are offering an extended reliability with redundant ring structures and extensive management features.

# Entry Line Fast Ethernet and Gigabit Ethernet Bridging Converter

## Application



## Ordering Information

Art.-No.	Description	Connectors
<b>Fast Ethernet Bridging Converter</b>		
MS655060	Industrial Fast Ethernet Bridging Converter, 1 x 10/100Base-TX / 100Base-FX, Multimode 1310nm SC	1x SC duplex 1x RJ-45 2x Power, 1x Alarm
MS655061	Industrial Fast Ethernet Bridging Converter, 1 x 10/100Base-TX / 100Base-FX, Multimode 1310nm ST	1x ST duplex 1x RJ-45 2x Power, 1x Alarm
MS655062	Industrial Fast Ethernet Bridging Converter, 1 x 10/100Base-TX / 100Base-FX, Single Mode 1310nm SC	1x SC duplex 1x RJ-45 2x Power, 1x Alarm
MS655063	Industrial Fast Ethernet Bridging Converter, 1 x 10/100Base-TX / 100Base-FX, Single Mode 1310nm ST	1x ST duplex 1x RJ-45 2x Power, 1x Alarm
<b>Gigabit Ethernet Bridging Converter</b>		
MS655099	Industrial Gigabit Ethernet Bridging Converter, 1x 10/100/1000Base-T to 1000Base-X	1x SFP 1x RJ-45 2x Power, 1x Alarm

## Accessories

Art.-No.	Description	Connectors
MS700420	DIN-rail power supply 24 Watt 24 V / 1.0 A, wide range input 85-264 VAC	In: 3-pin Out: 2-pin
MS700421	DIN-rail power supply 60 Watt 24 V / 2.5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700422	DIN-rail power supply 120 Watt 24 V / 5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700434	DC/DC DIN-rail power supply 24 Watt 24 V/1.0 A, wide range input 18-75 V DC	In: 3-pin Out: 2-pin

Further products on request.

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## Technical Specifications

### Type

Industrial Bridging Converter for Fast and Gigabit Ethernet

### Fiber type

Multimode 50 - 62,5/125 µm,  
Single Mode 9/125 µm, duplex

### Cable type

Shielded Twisted Pair cable, 100 Ohm, Category 5, Pin out RJ45-ports auto crossing

### Data rate

10 and 100 Mbps (Fast Ethernet)  
10, 100 and 1000 Mbps (GBE)

### LED displays

Per unit:  
Power1 (green), Power2 (green),  
Fault (red)

Fiber Link: Link/Activity (green),  
Half/Full Duplex (yellow)

TX: Link/Active (green), 10/100M (yellow)

### DIP switch

DIP Switch 1:  
ON: Enables Port/Power Alarm  
OFF: Disables Port/Power Alarm

DIP Switch 2:  
ON: Enables LT (Link Through)  
OFF: Disables LT (Link Through)

DIP Switch 3:  
ON: 100Base-FX Half-duplex mode  
OFF: 100Base-FX Full-duplex mode

DIP Switch 4:  
ON: Converter Mode (100TX to 100FX)  
OFF: Switching Mode

### Mounting

35 mm DIN-rail, according  
DIN EN 50 022 and wall mount

### Power supply

12 - 48 VDC /  
connections with screw terminals,  
redundant ports

### Dimensions

30 x 95 x 140 mm (w x d x h)

### Operating temperature

-10°C to 60°C

### Storage temperature

-40°C to 85°C

### Rel. humidity

5% to 95% non condensing

### EMI

FCC Class A, CE EN61000-4-2, CE  
EN61000-4-3, CE EN-61000-4-4, CE  
EN61000-4-5, CE EN61000-4-6, CE  
EN61000-4-8, CE EN61000-4-11, CE  
EN61000-4-12, CE EN61000-6-2, CE  
EN61000-6-4

### Stability Testing

IEC60068-2-32 (Free fall),  
IEC60068-2-27 (Shock),  
IEC60068-2-6 (Vibration)

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# Entry Line

## Device Server RS-232/422/485 to IP

- **Reliable and cost effective conversion to Ethernet**
- **Easy handling (Plug & Play)**
- **Suitable for RS-232/422/485**
- **Optional with fiber interface**
- **Emulation with virtual COM-Port**
- **Windows Software included**
- **Compact design for DIN-rail mounting**



The Device Server allows a fast and easy network connection of serial devices with RS-232/422/485 interfaces. The use is universal and independent of the type of the serial interface. The transmission is realised by using the IP protocol. For the connection to the Ethernet network the device is equipped with one RJ-45 port (10/100Base-TX) or fiber uplink (100Base-FX).

The devices are very compact and designed for the mounting on DIN-rails. The Windows software for the detection, monitoring and configuration of the devices is included at delivery. For operation there is a virtual COM port emulated on the PC. Furthermore there are TCP-Server and -Client

services supported. The access to the management of this device is possible by SNMP or web based interface (https, SSH or SSL). For additional security the device has an option for tunnelling the serial data and to limit the IP-addresses, which are allowed to access the device. In case of any special event the device is able to send a notification via SNMP or e-mail.

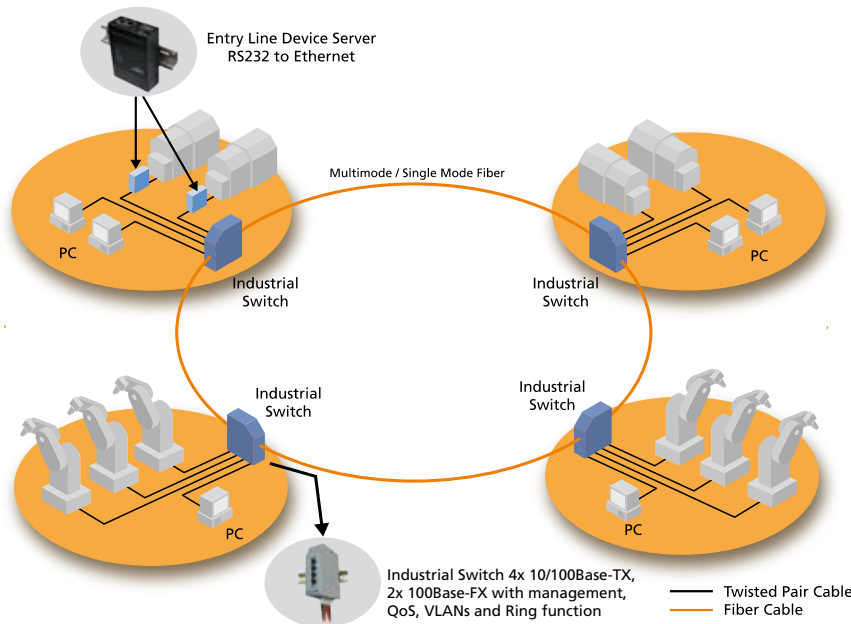
Via a pluggable connector the power supply can be realised externally by power supplies with a voltage of 12 - 48 V DC. Therefore the device can also be used in telecommunication or power distribution centres (redundant supply possible) and allows the monitoring of the de-

vices by relay contact. All new Entry Line devices distinguish themselves with easy handling (Plug&Play) and do not need extensive configuration. New developments are focussing on increasing the port numbers.

For applications requiring higher network complexity the enhanced line of MICROSENS Industrial Switches are offering an extended reliability with redundant ring structures and extensive management features.

# Entry Line Device Server RS-232/422/485 to IP

## Application



## Ordering Information

Art.-No.	Description	Connectors
MS655400	Industrial Ethernet Device Server, Entry Line, 1x RS-232/422/485 to 2x 10/100Base-TX	2x RJ-45, 1x SUBD9 2x Power, 1x Alarm
MS655401	Industrial Ethernet Device Server, Entry Line, 1x RS-232/422/485 to 1x 100Base-FX Multimode 1310 nm SC	1x SC duplex, 1x SUBD9 2x Power, 1x Alarm
MS655402	Industrial Ethernet Device Server, Entry Line, 1x RS-232/422/485 to 1x 100Base-FX Multimode 1310 nm ST	1x ST duplex, 1x SUBD9 2x Power, 1x Alarm
MS655403	Industrial Ethernet Device Server, Entry Line, 1x RS-232/422/485 to 1x 100Base-FX Single Mode 1310 nm SC 30 km	1x SC duplex, 1x SUBD9 2x Power, 1x Alarm
MS655404	Industrial Ethernet Device Server, Entry Line, 1x RS-232/422/485 to 1x 100Base-FX Single Mode 1310 nm ST 30 km	1x ST duplex, 1x SUBD9 2x Power, 1x Alarm

## Accessories

Art.-No.	Description	Connectors
MS700420	DIN-rail power supply 24 Watt 24 V / 1.0 A, wide range input 85-264 VAC	In: 3-pin Out: 2-pin
MS700421	DIN-rail power supply 60 Watt 24 V / 2.5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700422	DIN-rail power supply 120 Watt 24 V / 5 A, wide range input 85-264 VAC	In: 3-pin Out: 5-pin
MS700434	DC/DC DIN-rail power supply 24 Watt 24 V/1.0 A, wide range input 18-75 V DC	In: 3-pin Out: 2-pin

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## Technical Specifications

### Type

RS-232/422/485 to Ethernet (IP) Device Server for industrial use

### Fiber type

Multimode 50 or 62.5/125 µm duplex,  
Single Mode 9/125 µm, duplex

### Cable type serial

Twisted Pair cable, SUB-D9 (male)

### Cable type Ethernet

Shielded Twisted Pair cable, 100 Ohm,  
Category 5, RJ-45

### Data rate

up to 460.8 Kbps

### LED displays

PWR 1 / Ready:

1) *Red On*: Power is on and booting up.  
*Red Blinking*: Indicates an IP conflict, or DHCP or BOOTP server did not respond properly.

2) *Green On*: Power is on and functioning normally.

*Green Blinking*: Located by Administrator's Location function.

PWR 2 / Ready:

1) *Red On*: Power is on and booting up.  
*Red Blinking*: Indicates an IP conflict, or DHCP or BOOTP server did not respond properly.

2) *Green On*: Power is on and functioning normally.

*Green Blinking*: Located by Administrator's Location function.

Eth1 Link / ACT:

*Orange Blinking*: 10 Mbps Ethernet;  
*Green Blinking*: 100 Mbps Ethernet

Eth2 Link / ACT:

*Orange Blinking*: 10 Mbps Ethernet;  
*Green Blinking*: 100 Mbps Ethernet

TX / RX:

Serial port is receiving data (Orange);  
Serial port is transmitting data (Green).

### Utilities

Management Utility for Windows  
NT/2000/XP/2003

### Management

Web, Windows Management Utility,  
SNMP and Telnet

### Mounting

35 mm DIN-rail, according  
DIN EN 50 022 and wall mount

### Power supply

12 - 48 VDC / connections with screw  
terminals, redundant port

### Dimensions

72 x 32 x 100 mm (w x d x h)

### Operating temperature

-10°C to 60°C

### Storage temperature

-40°C to 85°C

### Rel. humidity

5% to 95% non condensing

### EMC

FCC Class A, CE Class A

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